



**Component project activity design document form**  
(Version 09.0)

*Complete this form in accordance with the instructions attached at the end of this form.*

**BASIC INFORMATION**

<b>Title of the CPA</b>	PV power plants project on collective housing of 2011-<2011-LH-001-01457>
<b>Scale of the CPA</b>	<input type="checkbox"/> Large-scale <input checked="" type="checkbox"/> Small-scale
<b>Version number of the CPA-DD</b>	Version <u>910</u>
<b>Completion date of the CPA-DD</b>	<u>24</u> / <u>7</u> / <u>049</u> /201 <u>96</u>
<b>Title and UNFCCC reference number of the registered CDM PoA</b>	<u>Title : Programme of Activities to introduce renewable energy system into collective housing, Republic of Korea</u> <u>Ref No. : PoA 9247</u>
<b>Title and reference number of the corresponding generic CPA</b>	<u>Title : PV power plants project on collective housing</u> <u>Ref No. : Generic CPA 1</u>
<b>Coordinating/managing entity</b>	Korea Land & Housing Corporation
<b>Host Party</b>	Republic of Korea
<b>Applied methodologies and standardized baselines</b>	methodology(ies): AMS-I.F (Version 02) No Standardized methodology has been selected for this PoA
<b>Sectoral scopes</b>	1 Energy industries (renewable - / non-renewable sources)
<b>Estimated amount of annual average GHG emission reductions</b>	1,326 <u>1</u> tCO <sub>2</sub> /yr

## SECTION A. Description of component project activity (CPA)

### A.1. Purpose and general description of CPA

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This CPA is a part of “Programme of Activities to introduce renewable energy system into collective housing, Republic of Korea” (hereafter PoA).

This CPA aims to mitigate GHG emissions through renewable energy project using photovoltaic power plant system on collective housing. The project activity using these systems to generate electricity (i.e. Type I) has a significant effect on reducing GHG emissions related to fossil fuel use. The CPA consists of 15 photovoltaic power plants which are located on the roof of the collective housing in Republic of Korea. Installed total capacity for the CPA are 1,457 KW as small-scale type project.

Renewable energy system's information is as follows:

<Table A-1. Photovoltaic power plant system>

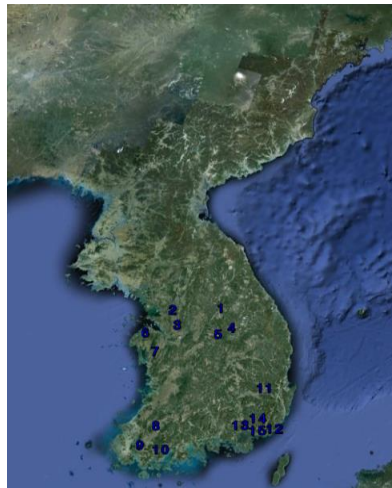
No.	Plant name	Modules		
		Capacity(W)	Numbers	Total installed Capacity (KW)
1	Hoengseong Eupha	240	252	60.48
2	Anyang Gwanyang (A1BL)	240	528	126.72
3	Osan Cheongho(1,2BL)	240	540	129.6
4	Jecheon Gangjeon(A2BL)	240	252	60.48
5	Chungju Yeonsu(2)	240	720	172.8
6	Seosan Daesan	240	144	34.56
7	Hongseong Namjang(2BL)	240	348	83.52
8	Gwangju Seonun(8-1,2BL)	240	1032	247.68
9	Yeongam Yongang(2)	240	192	46.08
10	Jangheung Geonsan(2)	240	168	40.32
11	Yeongcheon Mangjeong	240	336	80.64
12	Yangsan Gachon	240	324	77.76
13	Changwon Bongnim(A1BL)	240	456	109.44
14	Changwon Bongnim(A2BL)	240	384	92.16
15	Busan Jisa(2)	240	396	95.04
Total				1,457 KW

The estimated annual emission reduction amounts to 1,326 tCO<sub>2</sub>/yr for the CPA. The CPA eventually contributes to total 9,282 tCO<sub>2</sub> emission reduction for this crediting period.

### A.2. Location of CPA

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The each location of 15 PV power plant systems is presented as follows:



< Figure A.21. The location of PV power plant >

Geographic reference of this CPA is as follows:

<Table A.2. Geographic reference>

No	Plant name	<u>Address</u> <del>Cities or towns (Change to new address)</del>	Geographic Reference	
			Latitude	Longitude
1	Hoengseong Eupha	<del>34, Apdeulseo 2-ro, Hoengseong-eup, Hoengseong-gun, Gangwon-do 172, Eupari, Hoengseong-eup, Hoengseong-gun, Gangwon-do</del>	37.488065°	127.980440°
2	Anyang Gwanyang (A1BL)	<del>120, Dongpyeon-ro, Dongan-gu, Anyang-si, Gyeonggi-do Anyang Gwanyang site A-1BL, Gwanyang-dong, Dongan-gu, Anyang-si, Gyeonggi-do</del>	<del>37.4118703 7.403702°</del>	<del>126.9673334 26.334072°</del>
3	Osan Cheongho(1,2BL)	<del>486-23, Nambu-daero, Osan-si, Gyeonggi-do 449, Cheongho-dong, Osan-si, Gyeonggi-do</del>	37.129347°	127.087426°
4	Jecheon Gangjeon(A2BL)	<del>110, Cheongpungho-ro 7-gil, Jecheon-si, Chungcheongbuk-do Gangjeon site 2-danji, Gangjeon-dong, Jecheon-si, Chungcheongbuk-do</del>	<del>37.121313 37.117533°</del>	<del>128.2068284 28.218617°</del>
5	Chungju Yeonsu(2)	<del>24, Jugong-gil, Chungju-si, Chungcheongbuk-do 1228, Yeonsu-dong, Chungju-si, Chungcheongbuk-do</del>	<del>36.988566 36.988275°</del>	<del>127.9371024 27.935643°</del>
6	Seosan Daesan	<del>834-6, Mangilsan-ro, Daesan-eup, Seosan-si, Chungcheongnam-do 90-6, Daesan-ri, Daesan-eup, Seosan-si, Chungcheongnam-do</del>	<del>36.941238 36.941371°</del>	<del>126.437659 126.438644°</del>
7	Hongseong Namjang(2BL)	<del>10, Namjangjung-ro, Hongseong-eup, Hongseong-gun, Chungcheongnam-do San 99, Namjang-ri, Hongseong-eup, Hongseong-gun, Chungcheongnam-do</del>	<del>36.58829 36.591473°</del>	<del>126.66960 126.667312°</del>
8	Gwangju Seonun(8-1,2BL)	<del>68, Seonunjang-ro, Gwangsan-gu, Gwangju Seonun site 8-1BL, Seonam-dong, Gwangsan-gu, Gwangju-si</del>	<del>35.146516 35.144714°</del>	<del>126.7794244 26.778568°</del>
9	Yeongam Yongang(2)	<del>222, Samhojungang-ro, Samho-eup, Yeongam-gun, Jeollanam-do 193-2, Yongang-ri, Samho-eup, Yeongam-gun, Jeollanam-do</del>	<del>34.744688 34.744395°</del>	<del>126.4737854 26.476091°</del>
10	Jangheung Geonsan(2)	<del>3, Bukbu-ro, Jangheung-eup, Jangheung-gun, Jeollanam-do 688, Geonsan-ri, Jangheung-eup, Jangheung-gun, Jeollanam-do</del>	<del>34.6844493 625°</del>	<del>126.9036699 03325°</del>
11	Yeongcheon Mangjeong	<del>80, Mangjeong-ro, Yeongcheon-si, Gyeongsangbuk-do 373, Mangjeong-dong, Yeongcheon-si, Gyeongsangbuk-do</del>	35.982678°	128.952848°
12	Yangsan Gachon	<del>155, Gachon-ro, Mulgeum-eup, Yangsan-si, Gyeongsangnam-do Yangsan Gachon site, Gachon-ri, Mulgeum-eup, Yangsan-si,</del>	<del>35.323603 35.318312°</del>	<del>128.995823 128.994753°</del>

		<u>Gyeongsangnam-do</u>		
13	Changwon Bongnim(A1BL)	<u>50, Sobong-ro, Uichang-gu, Changwon-si, Gyeongsangnam-do A-1BL, Bongnim-dong, Uichang-gu, Changwon-si, Gyeongsangnam-do</u>	<u>35.254215</u> <u>35.253513°</u>	<u>128.670106</u> <u>128.683598°</u>
14	Changwon Bongnim(A2BL)	<u>25, Daebong-ro, Uichang-gu, Changwon-si, Gyeongsangnam-do A-2BL, Bongnim-dong, Uichang-gu, Changwon-si, Gyeongsangnam-do</u>	<u>35.251079</u> <u>35.252435°</u>	<u>128.665657</u> <u>128.683093°</u>
15	Busan Jisa(2)	<u>35, Gwahaksandan 2-ro 20beon-gil, Gangseo-gu, Busan 4183-1, Jisa-dong, Gangseo-gu, Busan-si</u>	<u>35.151467°</u>	<u>128.834029°</u>

### A.3. Technologies/measures

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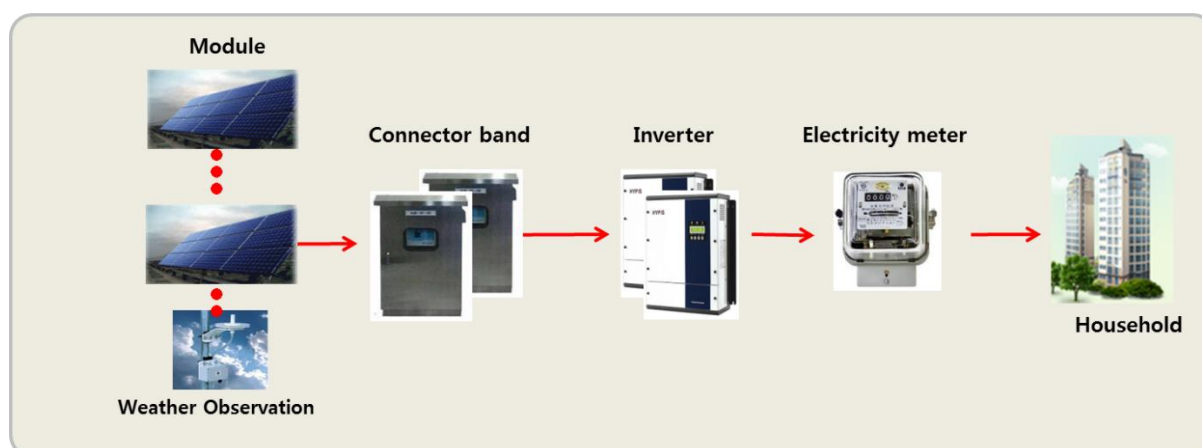
#### Technologies and/or measures to be employed and/or implemented by the CPA

This CPA comprises renewable energy generation units, such as photovoltaic power plants that supply electricity to users and will displace electricity from an electricity distribution system that is or would have been supplied by KEPCO grid.

The CPA installs photovoltaic power plant systems on collective housing. All installed solar modules shall be certificated by Korea Energy Agency (hereafter KEA as 'Act on the Promotion of the Development, Use and Diffusion of New and Renewable Energy'.<sup>1</sup>

The photovoltaic system converts solar radiation into electric energy and supplies electricity to the user or grid. It replaces electricity supplied from grid. The technology applied in the system is as follows:

- Solar module : Generate electricity from solar radiation
- Inverter : Invert generated DC electricity to AC electricity for use
- Electricity meter : display the amount of generated electricity



<Figure A.32. Photovoltaic power plant system>

Technical feature of installed equipment for project activity, <2011-LH- 001-01457>, is as below.

<sup>1</sup> Renewable energy equipment certification is based on "Act on the Promotion of the Development, Use and Diffusion of New and Renewable Energy". KEA certifies renewable energy equipments to ensure performance of the system.

No.	Plant name	Module					Inverter					
		Type	Mpp Voltage (V)	Mpp Current (A)	Efficiency (%)	Manufacturer	Type	Output (kVA)	Number	Control method	Efficiency (%)	Manufacturer
1	Hoengseong Eupha	Si	29.7	8.1	14.9	LG Electronics	Indoor, Vertical-mount	11,15	3, 3	PWM	92	Dasstech
2	Anyang Gwanyang (A1BL)	Si	29.7	8.1	14.9	LG Electronics	Indoor, Vertical-mount	11,15	3, 9	PWM	92	Dasstech
3	Osan Cheongho(1,2BL)	Si	29.7	8.1	14.9	LG Electronics	Indoor, Vertical-mount	11,15	14, 1	PWM	92	Dasstech
4	Jecheon Gangjeo(A2BL)	Si	29.7	8.1	14.9	LG Electronics	Indoor, Vertical-mount	11,15	2, 3	PWM	92	Dasstech
5	Chungju Yeonsu(2)	Si	29.7	8.1	14.9	LG Electronics	Indoor, Vertical-mount	15, 25	1, 7	PWM	92	Dasstech
6	Seosan Daesan	Si	29.7	8.1	14.9	LG Electronics	Indoor, Vertical-mount	11,15	2, 2	PWM	92	Dasstech
7	Hongseong Namjang(2BL)	Si	29.7	8.1	14.9	LG Electronics	Indoor, Vertical-mount	11,15	3, 5	PWM	92	Dasstech
8	Gwangju Seonun(8-1,2BL)	Si	30.3	7.93	14.9	T&Solar	Indoor, Vertical-mount	11,15	3, 19	PWM	92	Dasstech
9	Yeongam Yongang(2)	Si	30.3	7.93	14.9	T&Solar	Indoor, Vertical-mount	11,15	3, 2	PWM	92	Dasstech
10	Jangheung Geonsan(2)	Si	30.3	7.93	14.9	T&Solar	Indoor, Vertical-mount	11	5	PWM	92	Dasstech
11	Yeongcheon Mangjeong	Si	30.7	7.9	14.8	Hyundai solar	Indoor, Vertical-mount	12.5, 15	2, 6	PWM	94.6	Hyundai solar
12	Yongsan Gachon	Si	30.7	7.9	14.8	Hyundai solar	Indoor, Vertical-mount	12.5, 15	3, 5	PWM	94.6	Hyundai solar
13	Changwon Bongnim(A1BL)	Si	30.7	7.9	14.8	Hyundai solar	Indoor, Vertical-mount	12.5, 15	4, 7	PWM	94.6	Hyundai solar
14	Changwon Bongnim(A2BL)	Si	30.7	7.9	14.8	Hyundai solar	Indoor, Vertical-mount	12.5, 15	6, 3	PWM	94.6	Hyundai solar
15	Busan Jisa(2)	Si	30.7	7.9	14.8	Hyundai solar	Indoor, Vertical-mount	12.5, 15	3, 5	PWM	94.6	Hyundai solar

~~Based on manufacturer's specifications, the average lifetime of LG electronics, T&Solar, and Hyundai these solar modules is respectively 25, 25, 20 years cover the crediting period of the CPA.~~

**Facilities, systems and equipment in the baseline scenario (prior to the implementation of the CPA)**

The CPA displaces the electricity from KEPCO grid that is or would have been supplied by at least one fossil fuel fired generating unit prior to the implementation of the CPA.

**A.4. Coordinating/managing entity**

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Korea Land & Housing Corporation

**A.5. Parties and CPA implementers**

Parties involved	CPA implementers	Indicate if the Party involved wishes to be considered as CPA implementer (Yes/No)
Republic of Korea	• Public entity : LH Corporation	No

**A.6. Public funding of CPA**

&gt;&gt;

This CPA will not receive any public funds resulting from ODA(i.e. official development assistance) from Parties included in Annex I.

**A.7. History of CPA**

&gt;&gt;

LH Corporation ~~will~~ check the eligibility criteria ~~inof~~ PoA-DD that ~~theirits~~ photovoltaic power plants ~~isare~~ neither parts of ~~any~~ other ~~C~~component project activity nor ~~any~~ other CDM activities. ~~As for the above description,~~ LH Corporation will certify through the signed letter by director.

~~Therefore, Therefore, this~~the CPA is not ~~is not~~ involved in another photovoltaic power plants ~~thatwhich isare~~ registered or under validation as a CDM project activity or as a CPA under another PoA or as other GHG reduction projects.

The CPA as first CPA for the PoA has confirmed “

The proposed CPA is neither registered as a CDM project activity nor included in another registered CDM PoA” and “The CPA is not a project activity that has been deregistered”.

**A.8. Debundling**

&gt;&gt;

Q1. In accordance with the guidance below, is the proposed CPA deemed to be a de-bundled component of a large scale activity?

*A proposed small-scale CPA of a PoA shall be deemed to be a de-bundled component of a large scale activity if there is already an activity, which satisfies both conditions (a) and (b) below:*

*(a) Has the same activity implementer as the proposed small scale CPA or has a coordinating or managing entity, which also manages a large scale PoA of the same technology/measure, and;*

*(b) The boundary is within 1 km of the boundary of the proposed small-scale CPA, at the closest point(If each of the independent subsystems/measures included in the CPA of a PoA is no larger than 1% of the small-scale thresholds*



defined by the methodology applied, then that CPA of PoA is exempted from performing de-bundling check i.e., considering as not being a de-bundled component of a large scale activity)

In case of No.5 in this CPA : Yes

■

Q2. In accordance with the guidance below, can the proposed CPA be qualified to use simplified modalities and procedures for small-scale CDM?

*If a proposed small-scale CPA of a PoA is deemed to be a debundled component in accordance with Q1 above, but the total size of such a CPA combined with a registered small-scale CPA of a PoA or a registered CDM project activity does not exceed the limits for small-scale CDM as set out in Annex II of the decision 4/CMP.1, the CPA of a PoA can qualify to use simplified modalities and procedures for small-scale CDM project activities.*

Yes ■

No □

The proposed CPA is applicable under this PoA

The proposed CPA is not applicable under this PoA

< Figure A.3. De-bundling check list >

As for Q1,

~~In this project activity, LH Corporation is the a CPA implementer and CME of the PoA. LH Corporation as CME is not checks other PoAs that are: (i) in the same geographical area; (ii) use the same methodology as of the PoA to which proposed CPA is being added. There are only one another registered CDM project activity which implemented by LH Corporation as CPA implementer has another registered CDM project activity.~~ The project title is "Korea Land & Housing Corporation(LH Corporation)'s National Rental House PV power plant bundling CDM project(Ref. 5251)"(hereafter Ref.5251). This project consists of 36 photovoltaic power plants which is located on the roof the National Rental House, in Republic of Korea.

This CPA consists of 15 photovoltaic power plants and the independent subsystem ~~is are~~ as follows :

<Table A-3. Independent photovoltaic power plant >

No.	Plant name	AddressCities or towns	Capacity (kW)
1	Hoengseong Eupha	34, Apdeulseo 2-ro, Hoengseong-eup, Hoengseong-gun, Gangwon-do 172, Eupari, Hoengseong-eup, Hoengseong-gun, Gangwon-do	60.48
2	Anyang Gwanyang (A1BL)	120, Dongpyeon-ro, Dongan-gu, Anyang-si, Gyeonggi-do Anyang Gwanyang site A-1BL, Gwanyang-dong, Dongan-gu, Anyang-si, Gyeonggi-do	126.72
3	Osan Cheongho(1,2BL)	486-23, Nambu-daero, Osan-si, Gyeonggi-do 149, Cheongho-dong, Osan-si, Gyeonggi-do	129.6
4	Jecheon Gangjeo(A2BL)	110, Cheongpungho-ro 7-gil, Jecheon-si, Chungcheongbuk-do Gangjeo site 2-danji, Gangjeo-dong, Jecheon-si, Chungcheongbuk-do	60.48
5	Chungju Yeonsu(2)	24, Jugong-gil, Chungju-si, Chungcheongbuk-do 1228, Yeonsu-dong, Chungju-si, Chungcheongbuk-do	172.8
6	Seosan Daesan	834-6, Mangilsan-ro, Daesan-eup, Seosan-si, Chungcheongnam-do 90-6, Daesan-ri, Daesan-eup, Seosan-si, Chungcheongnam-do	34.56
7	Hongseong Namjang(2BL)	10, Namjangjung-ro, Hongseong-eup, Hongseong-gun, Chungcheongnam-do San 99, Namjang-ri, Hongseong-eup, Hongseong-gun, Chungcheongnam-do	83.52

8	Gwangju Seonun (8-1,2BL)	<u>68, Seonunjangang-ro, Gwangsan-gu, Gwangju Seonun site 8-1BL, Seonam-dong, Gwangsan-gu, Gwangju-si</u>	247.68
9	Yeongam Yongang(2)	<u>222, Samhojungang-ro, Samho-eup, Yeongam-gun, Jeollanam-do 193-2, Yongang-ri, Samho-eup, Yeongam-gun, Jeollanam-do</u>	46.08
10	Jangheung Geonsan(2)	<u>3, Bukbu-ro, Jangheung-eup, Jangheung-gun, Jeollanam-do 688, Geonsan-ri, Jangheung-eup, Jangheung-gun, Jeollanam-do</u>	40.32
11	Yeongcheon Mangjeong	<u>80, Mangjeong-ro, Yeongcheon-si, Gyeongsangbuk-do 373, Mangjeong-dong, Yeongcheon-si, Gyeongsangbuk-do</u>	80.64
12	Yangsan Gachon	<u>155, Gachon-ro, Mulgeum-eup, Yangsan-si, Gyeongsangnam-do Yangsan Gachon site, Gachon-ri, Mulgeum-eup, Yangsan-si, Gyeongsangnam-do</u>	77.76
13	Changwon Bongnim(A1BL)	<u>50, Sobong-ro, Uichang-gu, Changwon-si, Gyeongsangnam-do A-1BL, Bongnim-dong, Uichang-gu, Changwon-si, Gyeongsangnam-do</u>	109.44
14	Changwon Bongnim(A2BL)	<u>25, Daebong-ro, Uichang-gu, Changwon-si, Gyeongsangnam-do A-2BL, Bongnim-dong, Uichang-gu, Changwon-si, Gyeongsangnam-do</u>	92.16
15	Busan Jisa(2)	<u>35, Gwahaksandan 2-ro 20beon-gil, Gangseo-gu, Busan 1483-1, Jisa-dong, Gangseo-gu, Busan-si</u>	95.04
Total			1,457 KW

In the above table, the power plants excluding No.5 and No.8 that ~~is are~~ less than 1% of the small-scale thresholds defined by AMS-I.F. (i.e., 150 KW) and these ~~is are~~ exempted from de-bundling check.<sup>2</sup> In case of —No.8 in this CPA, any 36 photovoltaic power plants in of Ref.5251 are not located within 1 km of the plant of No.8 (Refer to A.4.1.3 and A.4.1.4 of PDD, in Ref.5251). So, the power plants excluding No.5 in this CPA ~~is are~~ not deemed a de-bundled component of large-scale activity another CDM Programme Activity.

But, the distance between No.5 in this CPA and No.12 in of Ref.5251 is within 1 km as follows:



< Figure A.44. Distance between No.5 in this CPA and No.12 in Ref.5251 >

So, No.5 of this CPA is further analyzed and explained in the following paragraphs (Q2).

As for Q2,

<sup>2</sup> Based on "Guidelines on assessment of debundling for SSC project activities, Version 03", issued on the EB 54<sup>th</sup> meeting, although the distance between No.4(Jecheon Gangeo(A2BL)) in this CPA and No.22(Jecheon Gangeo(A3)) in Ref.5251 may be within 1 km, No.4 is exempted from de-bundling check because the capacity is less than 150 KW. Therefore, No.4 of this CPA is not a de-bundled component of a large scale project activity.



In the case of No. 5, the total size of No.5 combined with No.12 in Ref. 5251 is 232.8 KW(172.8 + 60) and does not exceed the limits for small-scale CDM as set out in Annex II of the decision 4/CMP.1. So, No.5 of this CPA is deemed to be a de-bundled component of a large scale activity but can qualify to use the simplified modalities and procedures for small-scale project activities.

Therefore, this CPA is applicable under this PoA.

## SECTION B. Application of methodologies and standardized baselines

### B.1. References to methodologies and standardized baselines

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#### Methodology Title:

AMS-I.F – Renewable electricity generation for captive use and mini-grid (version 02)

#### Reference :

Guidelines on the demonstration of additionality of small-scale project activities (EB 68, Annex 27, Version 09.0)

#### Methodological tool:

Tool to calculate the emission factor for an electricity system (Version 03.0.0)

Further information for the methodology can be found at:

<http://cdm.unfccc.int/methodologies/SSGmethodologies/approved>

~~As all CPAs produce electricity and displace the electricity supplied from grid, AMS-I.F methodology is applicable to SSC-CPAs which introduce photovoltaic power plant system with a maximum output capacity of 15 MW. This process is described as follows:~~

<Table B.1. Applicability of AMS-I.F >

AMS-I.F requirements		SSC-CPA qualification Justification		
<del>This methodology comprises renewable energy generation units, such as photovoltaic, hydro, tidal/wave, wind, geothermal and renewable biomass that supply electricity to user(s). The project activity will displace electricity from an electricity distribution system that is or would have been supplied by at least one fossil fuel fired generating unit i.e. in the absence of the project activity, the users would have been supplied electricity from one or more sources listed below:</del> <del>(a) A national or a regional grid (grid hereafter);</del> <del>(b) Fossil fuel fired captive power plant;</del> <del>(c) A carbon intensive mini-grid</del>		<u>Satisfied</u>  <del>All CPAs comprise of photovoltaic power plant that will be supplied to households displacing electricity supplied from KEPCO grid.</del>		
<del>For the purpose of this methodology, a mini-grid is defined as small-scale power system with a total capacity not exceeding 15 MW (i.e. the sum of installed capacities of all generators connected to the mini-grid is equal to or less than 15 MW) which is not connected to a national or a regional grid.</del>		<u>N/A</u>  <del>As the end users would have been used the electricity supplied from KEPCO grid, this condition is not applicable.</del>		
<del>Illustration of respective situations under which each of the methodology (AMS-I.D, AMS-I.F and AMS-I.A2) applies is included in Table 2.</del>  <del>Table 2: Applicability of AMS-I.D, AMS-I.F and AMS-I.A based on project types</del>		<u>Satisfied</u>  <del>As all CPAs displace grid electricity consumption, AMS-I.F methodology is applicable.</del>		
	Project type	AMS-I.A	AMS-I.D	AMS-I.F
4	Project supplies		✓	

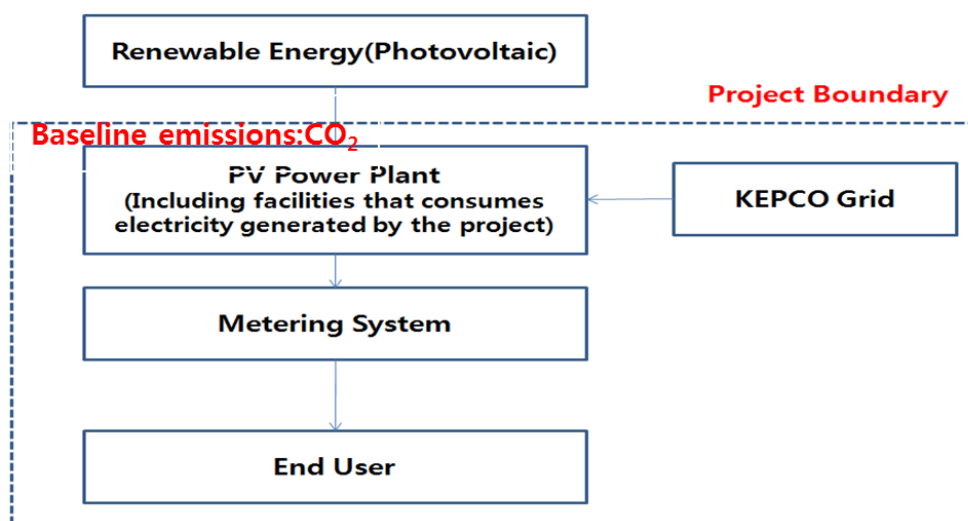
	<del>electricity to a national/regional grid</del>				
2	<del>Project displaces grid electricity consumption (e.g. grid import) and/or captive fossil fuel electricity generation at the user end (excess electricity may be supplied to a grid)</del>			✓	
3	<del>Project supplies electricity to an identified consumer facility via national/regional grid (through a contractual arrangement such as wheeling)</del>		✓		
4	<del>Project supplies electricity to a mini grid system where in the baseline all generators use exclusively fuel oil and/or diesel fuel</del>			✓	
5	<del>Project supplies electricity to household users (included in the project boundary) located in off grid areas</del>	✓			
<del>Hydro power plants with reservoirs that satisfy at least one of the following conditions are eligible to apply this methodology:</del> <ul style="list-style-type: none"> <li><del>• The project activity is implemented in an existing reservoir with no change in the volume of reservoir;</del></li> <li><del>• The project activity is implemented in an existing reservoir, where the volume of reservoir is increased and the power density of the project activity, as per definitions given in the project emissions section, is greater than 4 W/m<sup>2</sup>;</del></li> <li><del>• The project activity results in new reservoirs and the power density of the power plant, as per definitions given in the project emissions section, is greater than 4 W/m<sup>2</sup>.</del></li> </ul>					
<del>For biomass power plants, no other biomass other than renewable biomass are to be used in the project plant.</del>					
<del>This methodology is applicable for project activities that: (a) Install a new power plant at a site where there was no renewable energy power plant operating prior to the implementation of the project activity (Greenfield plant); (b) Involve a capacity addition, (c) Involve a retrofit of (an) existing plant(s); or (d) Involve a replacement of (an) existing plant(s).</del>					
<del>In the case of project activities that involve the</del>					
<del><u>N/A</u></del> As all CPAs do not apply hydro power plant, this condition is not applicable.					
<del><u>N/A</u></del> As all CPAs do not apply biomass power plants, this condition is not applicable.					
<del><u>Satisfied</u></del> As all CPAs install a new PV power plant at a site where there was no renewable energy power plant operating prior to the implementation of the project activity (Greenfield plant), this condition is applicable.					
<del><u>N/A</u></del>					

<del>capacity addition of renewable energy generation units at an existing renewable power generation facility, the added capacity of the units added by the project should be lower than 15 MW and should be physically distinct from the existing units.</del>	<del>As all CPAs install a new PV power plant at a site where there was no renewable energy power plant operating prior to the implementation of the project activity (Greenfield plant), this condition is not applicable.</del>
<del>In the case of retrofit or replacement, to qualify as a small-scale project, the total output of the retrofitted or replacement unit shall not exceed the limit of 15 MW.</del>	<del><u>N/A</u></del> <del>As all CPAs install a new PV power plant at a site where there was no renewable energy power plant operating prior to the implementation of the project activity (Greenfield plant), this condition is not applicable.</del>
<del>If the unit added has both renewable and non-renewable components (e.g. a wind/diesel unit), the eligibility limit of 15 MW for a small-scale CDM project activity applies only to the renewable component. If the unit added co-fires fossil fuel, the capacity of the entire unit shall not exceed the limit of 15 MW.</del>	<del><u>N/A</u></del> <del>As all CPAs install a new PV power plant that is equal to or less than 15 MW, this condition is not applicable.</del>
<del>Combined heat and power (co-generation) systems are not eligible under this category.</del>	<del><u>N/A</u></del> <del>As all CPAs do not apply co-generation systems, this condition is not applicable.</del>
<del>If electricity and/or steam/heat produced by the project activity is delivered to a third party i.e. another facility or facilities within the project boundary, a contract between the supplier and consumer(s) of the energy will have to be entered that ensures that there is no double counting of emission reductions.</del>	<del><u>N/A</u></del> <del>As all CPAs use the produced electricity in collective housing within project boundary, this condition is not applicable.</del>
<del>In the specific case of biomass project activities the applicability of the methodology is limited to either project activities that use biomass residues only or biomass from dedicated plantations complying with the applicability conditions of AM0042.</del>	<del><u>N/A</u></del> <del>As all CPAs do not apply biomass project activities, this condition is not applicable.</del>
<del>In the specific case of biomass project activities the determination of leakage shall be done following the general guidance for leakage in small-scale biomass project activities (attachment C of Appendix B of simplified modalities and procedures for small-scale clean development mechanism project activities; decision 4/CMP.1) or following the procedures included in the leakage section of AM0042.</del>	<del><u>N/A</u></del> <del>As all CPAs do not apply biomass project activities, this condition is not applicable.</del>
<del>In case the project activity involves the replacement of equipment, and the leakage from the use of the replaced equipment in another activity is neglected, because the replaced equipment is scrapped, an independent monitoring of scrapping of replaced equipment needs to be implemented. The monitoring should include a check if the number of project activity equipment distributed by the project and the number of scrapped equipment correspond with each other. For this purpose scrapped equipment should be stored until such correspondence has been checked. The scrapping of replaced equipment should be documented and independently verified.</del>	<del><u>N/A</u></del> <del>As all CPAs install new PV power plants at a site where there was no renewable energy power plant operating prior to the implementation of the project activity (Greenfield plant), this condition is not applicable.</del>

## B.2. Project boundary, sources and greenhouse gases (GHGs)

>>

As per stipulated in AMS-I.F (Version 02), the extent of CPA boundary includes facilities consuming electricity generated by this project. The project boundary is confined to physical, geographical site of renewable generating units. The boundary also extends to the project power plant and all power plants connected physically to the electricity system of KEPCO.



< Figure D-15. Project Boundary >

In addition, ~~as described in A.7,~~ the project boundary of the CPA is located within the geographical boundary of the PoA.

The gases and sources relevant to the CPA are listed below based on the AMS-I.F, Version 02.

Source		GHG	Included?	Justification/Explanation
Baseline	CO <sub>2</sub> emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity	CO <sub>2</sub>	Included	Major source of emissions in the baseline
		CH <sub>4</sub>	Excluded	Excluded for simplification. This is conservative
		N <sub>2</sub> O	Excluded	Excluded for simplification. This is conservative
Project activity	CO <sub>2</sub> emissions from on-site consumption	CO <sub>2</sub>	Excluded	Based on AMS-I.F
		CH <sub>4</sub>	Excluded	Based on AMS-I.F
		N <sub>2</sub> O	Excluded	Based on AMS-I.F

### B.3. Establishment and description of baseline scenario

>>

The small-scale methodologies applied to PoA define the indicative baseline scenario as follows:

According to AMS-I.F version 02, the baseline emissions are the quantity of net electricity displaced as a result of the implementation of the CDM CPA in the year y, times the emission factor of a grid calculated as per procedures provided in AMS-I.D. i.e. the baseline emissions are calculated as follows:

$$BE_y = EG_{BL,y} * EF_{CO_2,y}$$

Where :

- $BE_y$**  = Baseline emissions in year  $y$  (tCO<sub>2</sub>)  
 **$EG_{BL,y}$**  = Quantity of net electricity displaced as a result of the implementation of the CDM project activity in year  $y$  (MWh)  
 **$EF_{CO_2,y}$**  = Emission Factor of a grid calculated as per the procedures provided in AMS-I.D (tCO<sub>2</sub>/MWh)

In paragraph 12 of AMS-I.D, ver.17, the emission factor can be calculated in a transparent and conservative manner as follows:

- (a) A combined margin (CM), consisting of the combination of operating margin (OM) and build margin (BM) according to the procedures prescribed in the “Tool to calculate the Emission Factor for an electricity system”;

OR

- (b) The weighted average emissions (in tCO<sub>2</sub>/MWh) of the current generation mix. The data of the year in which project generation occurs must be used.

As the PoA choose the condition (a), a combined margin(CM) is calculated in B.6.1 of Part II in PoA-DD according to “Tool to calculate the emission factor for an electricity system (version 03.0.0)”

## B.4. Estimation of emission reductions

### B.4.1. Explanation of methodological choices

>>

#### 1. Baseline Emissions

According to AMS-I.F methodology, baseline emission of this system displacing KEPCO grid electricity is calculated as below:

$$BE_y = EG_{BL,y} * EF_{CO_2,y}$$

Where:

- $BE_y$**  — Baseline Emissions in year  $y$  (tCO<sub>2</sub>)  
 **$EG_{BL,y}$**  Quantity of net electricity displaced as a result of the implementation of the CDM project activity in year  $y$  (MWh)  
 **$EF_{CO_2,y}$**  — Emission factor (tCO<sub>2</sub>/MWh)

Emission factor of a grid shall be calculated as per the procedures provided in AMS-I.D.

The emission factor of the CPA applies the calculation in section B.6 of Part II in PoA-DD.

In Ex-ante calculations of emission reductions,  **$EG_{BL,y}$**  will be estimated based on total installed capacity, operating days and utilization coefficient<sup>3</sup> of photovoltaic system using duration of sunshine.

#### 2. Project Activity Emissions

<sup>3</sup> The utilization coefficient is based on the data available published from public entities.

According to AMS-I.F methodology, project activity emission of this system is zero because this system does not use any energy source for operation.

### **3. Leakage**

As the energy generating equipment is not transferred from another activity, leakage is not to be considered.

### **4. Emission Reductions**

$$ER = BE - PE - LE$$

Where:

ER<sub>y</sub> Emission reductions in year y (t CO<sub>2e</sub>/y)

BE<sub>y</sub> Baseline Emissions in year y (t CO<sub>2</sub>/y)

PE<sub>y</sub> Project emissions in year y (t CO<sub>2</sub>/y)

LE<sub>y</sub> Leakage emissions in year y (t CO<sub>2</sub>/y)

#### **B.4.2. Data and parameters fixed ex ante**

Data/Parameter	<i>EF</i> CO <sub>2,y</sub>
Data unit	tCO <sub>2</sub> / MWh
Description	Emission factor
Source of data	Calculated
Value(s) applied	0.6789
Choice of data or measurement methods and procedures	This value is calculated according to "Tool to calculate the emission factor for an electricity system (version 02.2.1)." Applied value was calculated by referring Statistics of Electric Power in KOREA (2008, 2009, 2010) (KEPCO) and Status of Generation facility (2011) (Korea Power Exchange).
Purpose of data	Calculation of baseline emissions
Additional comment	<p>–This data will be calculated at the time of PDD submission and will not be changed during the first crediting period.</p> <p>–This value is ex-ante value which is calculated at the time of PDD submission and will be applied during the crediting period without update.</p>

#### **B.4.3. Ex ante calculation of emission reductions**

>>

### **1. Baseline Emissions**

According to AMS-I.F methodology, baseline emission of this system displacing KEPCO grid electricity is calculated as below:

$$BE_y = EG_{BL,y} * EF_{CO2,y}$$

Where:

BE<sub>y</sub> – Baseline Emissions in year y (tCO<sub>2</sub>)

EG<sub>BL,y</sub> – Quantity of net electricity displaced as a result of the implementation of the CDM project activity in year y (MWh)

EF<sub>CO2,y</sub> – Emission factor (tCO<sub>2</sub>/MWh)

- Emission factor of a grid shall be calculated as per the procedures provided in -AMS-I.D



As per described in B.6.3 of Part II in PoA-DD, in ex-ante calculation of emission reductions,  $EG_{BL,y}$  is estimated as follows :

$$EG_{BL,y} = 1,457 \text{ kW} * 365 \text{ days/yr} * 3.672 \text{ hours/day}^4 / 1000 \\ = 1,953 \text{ MWh/yr}$$

$$BE_y = 1,953 \text{ MWh/yr} * 0.6789 \text{ tCO}_2/\text{MWh} \\ = 1,326 \text{ tCO}_2/\text{yr}$$

## **2. Project Activity Emissions**

According to AMS-I.F methodology, project activity emission of this system is zero because this system does not use any energy source for operation.

## **3. Leakage**

As the energy generating equipment is not transferred from another activity, leakage is not to be considered.

## **4. Emission Reductions**

$$ER = BE - PE - LE$$

Where:

$ER_y$  Emission reductions in year y (t-CO<sub>2e</sub>/y)  
 $BE_y$  Baseline Emissions in year y (t-CO<sub>2</sub>/y)  
 $PE_y$  Project emissions in year y (t-CO<sub>2</sub>/y)  
 $LE_y$  Leakage emissions in year y (t-CO<sub>2</sub>/y)

Therefore,  $ER_y$  is 1,326 tCO<sub>2</sub>/yr.

### **B.4.4. Summary of ex ante estimates of emission reductions**

Year	Baseline emissions (t CO <sub>2e</sub> )	Project emissions (t CO <sub>2e</sub> )	Leakage (t CO <sub>2e</sub> )	Emission reductions (t CO <sub>2e</sub> )
Year 1	1,326	0	0	1,326
Year 2	1,326	0	0	1,326
Year 3	1,326	0	0	1,326
Year 4	1,326	0	0	1,326
Year 5	1,326	0	0	1,326
Year 6	1,326	0	0	1,326
Year 7	1,326	0	0	1,326
<b>Total</b>	9,282	0	0	9,282
<b>Total number of crediting years</b>	7			

<sup>4</sup> The utilization coefficient is based on the report available by KPX(Korea Power Exchange). The report specifies the average coefficient for utilization of photovoltaic power plants between 2007 and 2008.

Annual average over the crediting period	1,326	0	0	1,326
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**B.5. Monitoring plan****B.5.1. Data and parameters to be monitored**

Data/Parameter	$EG_{BL,y}$
Data unit	MWh
Description	Quantity of net electricity displaced as a result of the implementation of the CDM project activity in year y
Source of data	Calculated
Value(s) applied	1,953  The actual net electricity will be monitored during monitoring period. For the purpose of present estimation, this value is estimated based on the total installed capacity, yearly operating hours and utilization coefficient of photovoltaic system.
Measurement methods and procedures	$EG_{BL,y}$ means the quantity of net electricity supplied to households. The net electricity generation is the difference between the total quantity of electricity generated by this project and the auxiliary electricity consumption.  <u>As for the total quantity of electricity generated by this project,</u>  Measuring equipment : Electricity meter Measurement interval : Continuous  <u>As for the auxiliary electricity consumption (of connector bands and inverters),</u>  The auxiliary electricity consumption is calculated as follows:  The auxiliary electricity consumption = Standby power <sup>5</sup> (of connector bands and inverters) * Numbers * 24 Hours).  The auxiliary electricity consumption will be calculated during the monitoring period and the operating hours are considered as 24 hours in conservative approach.
Monitoring frequency	Continuous monitoring, hourly measurement and at least monthly recording
QA/QC procedures	- Calibration frequency : According to local regulation(Measures Act), at least once in 8 years - Accuracy of measurement equipment : within $\pm 1.0\%$ (According to Guideline for the support on the new & renewable energy equipment) - To ensure the quantity of generated electricity as result of CDM project, facility manager shall cross-check the data in accordance with the operations manual
Purpose of data	Calculation of baseline emissions
Additional comment	- Data will be at least recorded monthly and aggregated yearly. - Data will be kept at least for two years after the end of the last crediting period.

**B.5.2. Sampling plan**

&gt;&gt;

<sup>5</sup> Standby power is the electric power consumed by electronic appliances while they are switched off or in a standby mode and is based on the letter (or evidence) from manufacturers.

The CPA has not involved with procedure of sampling plan.

### **B.5.3. Other elements of monitoring plan**

>>

Monitoring will be carried out for each individual CPA. For each CPA, all parameters will be monitored by the implementing entity of the CPA according to the procedures and monitoring framework under the PoA and will be submitted to the managing entity.

The main monitoring data are electricity supplied to households displacing electricity supplied from KEPCO grid. To check the amount of generated electricity, the measuring device will be installed.

The monitoring plan has been developed based on approved methodology AMS- I.F. and more details are as follows:

- Monitoring equipment : Electricity meter
- Relevant laws and standards of Korea :
  - Electric Utility Act
  - Guideline for the support on the new & renewable energy equipment
  - Measures Act

### **< Data Recording & Archiving >**

The generated electricity is continuously measured, stored and accumulated through electricity meter of PV power plants. All data collected will be kept at least for two years after the end of the last crediting period.

The net electricity generation is the difference between the total quantity of electricity generated by this project and the auxiliary electricity consumption.

The ~~auxiliary electricity consumption~~ will be conservatively calculated using recording annually the ~~number of systems operating and estimating the annual hours of systems operating.~~

Equation: The auxiliary electricity consumption = Standby power<sup>6</sup> \* Numbers \* Hours

### **< Quality Assurance and Quality Control >**

- Contingency plan :

In case of electricity meter trouble or data transferring error, the person in charge of monitoring is responsible for prompt grasping the problem and restoring it in due course.

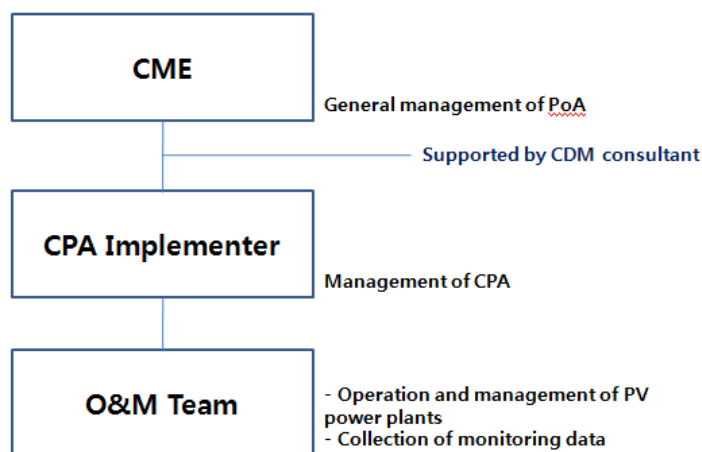
- Calibration :

Electricity meter should be recalibrated at appropriate intervals according to manufacturer specifications, but at least once in 8 years.

- Monitoring organization and responsibility :

---

<sup>6</sup> Standby power is the electric power consumed by electronic appliances while they are switched off or in a standby mode and is based on the letter (or evidence) from manufacturers.



< Figure D-26. Monitoring organization >

Person in charge of O&M team in CPA implementer will operate and manage PV power plants and collect monitoring data. All collected data will reported to CME as electronically or manually manner.

#### < Training>

The person in charge of monitoring will be trained according to CDM Operation Manual.

## SECTION C. Start date, crediting period type and duration

### C.1. Start date of CPA

>>

19/09/2011 (Facility supply and installation contract)

The start date of the CPA is no earlier than the date of commencement of PoA validation.

### C.2. Expected operational lifetime of CPA

>>

20 years

### C.3. Crediting period of CPA

#### C.3.1. Type of crediting period

>>

Renewable crediting period.

#### C.3.2. Start date of crediting period

>>

The date of complete submission to UNFCCC or the date of commercial operation of this CPA, whichever occurs later.

#### C.3.3. Duration of crediting period

>>

The length of 1st crediting period : 7 years

The number of renewal periods : 2

The duration of crediting period of the CPA shall be limited to the end date of the PoA regardless of when the CPA was added.

## SECTION D. Environmental impacts

### D.1. Analysis of environmental impacts

>>

According to the Environmental Impact Assessment Act, the project participant has to perform the environmental impact assessment if the capacity of plant facility is more than 100,000kW.

In addition, according to the Framework Act on Environmental Policy, prior environmental review shall be enforced on the development project executed within the region needed for administrative plans. In Korea, the scope of the businesses subject to prior environmental review according to the Framework Act on Environmental Policy is shown below.

Division	Scope of business
Energy development project	In case of public announcement of designation of prearranged area for electric source development business according to the electric source development promotion act, provision 11

In ~~this proposed~~ CPA, the each capacity is less than 100,000KW and the project is not related to electric source development business. Therefore, this project activity is excluded from the scope of businesses subject to environmental impact assessment.

### D.2. Environmental impact assessment

>>

The CPA less than 100 MW and not involved in electricity business do not need Environmental impact assessment.

## SECTION E. Local stakeholder consultation

### E.1. Modalities for local stakeholder consultation

>>

Stakeholder consultation is done at the CPA level.

After that from 23 August 2011, the LH Corporation posted the notice of CDM project in order to take opinions from various strata of local stake holders into consideration.

The post provided information about this CPA:

- ◆ Background of CDM project
- ◆ Outline (the estimated emissions, project sites, etc.)
- ◆ Schedule
- ◆ Contact point



< Figure C-4.7. The stakeholders' comment on CDM Project at LH Corporation web site>

## E.2. Summary of comments received

>>

There is no comment directly related to construction of the renewable energy systems.

## E.3. Consideration of comments received

>>

~~As described in D.5, n~~ No concerns or negative options were raised from the stakeholders.

## SECTION F. Eligibility for inclusion

This CPA satisfies all the eligibility criteria for inclusion in the PoA as detailed in Section B.2 of the PoA-DD:

No	Eligibility criterion - Category	Eligibility criterion - Required condition	Supporting evidence for inclusion	Description of this CPA in relation to the criterion and supporting evidence
1	<u>Geographical boundary</u>	The CPA is performed within the Republic of Korea.	<del>Means of evaluation : Desk review and on-site visit</del> <del>Evidence : GPS information, A.7 of CPA-DD</del>	<u>GPS information is confirmed by DOE through desk review and on-site visit.</u>
2	<u>Target groups CPA and remains within SSC thresholds</u>	The CPA applies photovoltaic power plants to collective housing and the installed capacity is less than or equal to 15MW.	<del>Means of evaluation : Desk review and on-site visit</del> <del>Evidence : Project plan document</del>	<u>Project plan document is confirmed by DOE through desk review and on-site visit.</u>
3	<u>Double counting and confirmation that CPAs are not included in other PoAs or de-registered CDM project activities</u>	The CPA is not involved in another renewable energy project that is registered or under validation as a CDM project activity or as a CPA under another PoA, in accordance with the signed certificate by CPA implementer.	<del>Means of evaluation : Desk review and on-site visit</del> <del>Evidence : Certificate of double counting check</del>	<u>Certificate of double counting check is confirmed by DOE through desk review and on-site visit.</u>



No	Eligibility criterion - Category	Eligibility criterion - Required condition	Supporting evidence for inclusion	Description of this CPA in relation to the criterion and supporting evidence
4	<u>Specifications of technology/measure</u>	The solar modules obtain certification for new and renewable energy facilities from facility certification institution.	<u>Means of evaluation: Desk review and on-site visit</u> <u>Evidence: Certificate from KEA</u>	<u>Certificate from KEA is confirmed by DOE through desk review and on-site visit.</u>
5	<u>Start date of the CPA</u>	The CPA has the documentary evidence to check its start date and does not commence prior to the start date of validation for PoA (01/09/2011)	<u>Means of evaluation: Desk review and on-site visit</u> <u>Evidence: Facility supply and installation contract</u>	<u>Facility supply and installation contract confirmed by DOE through desk review and on-site visit.</u>
6	<u>Conditions that ensure applicability of the applied methodologies</u>	The CPA meets <del>the applicability of AMS-IF</del> as described in B.2 of Part II in PoA-DD.	<u>Means of evaluation: Desk review and on-site visit</u> <u>Evidence: D.2 of CPA-DD</u>	<u>CPA-DD is validated by DOE through desk review and on-site visit.</u>
7	<u>Additionality demonstration</u>	The CPA meets the requirements pertaining to demonstration of additionality in B.5 of Part II in PoA-DD.	<u>Means of evaluation: Desk review and on-site visit</u> <u>Evidence: D.5 of CPA-DD</u>	<u>CPA-DD is validated by DOE through desk review and on-site visit.</u>
8	<u>Requirements for Local stakeholder consultation</u>	The CPA performs local stakeholder consultation before the inclusion of SSC-CPA.	<u>Means of evaluation: Desk review and on-site visit</u> <u>Evidence: Post in website of LH Corporation</u>	<u>The post is confirmed by DOE through desk review and on-site visit.</u>
9	<u>Requirements for environmental impact analysis</u>	The CPA considers the environmental impacts analysis according to the regulation of the Republic of Korea.	<u>Means of evaluation: Desk review and on-site visit</u> <u>Evidence: Section B of CPA-DD</u>	<u>CPA-DD is validated by DOE through desk review and on-site visit.</u>
10	<u>Diversion of official development assistance</u>	The CPA has the documentary evidence to check project costs and does not result in a diversion of official development assistance from Annex I.	<u>Means of evaluation: Desk review and on-site visit</u> <u>Evidence: Official notice on accounting</u>	<u>Official notice on accounting is confirmed by DOE through desk review and on-site visit.</u>

No	Eligibility criterion - Category	Eligibility criterion - Required condition	Supporting evidence for inclusion	Description of this CPA in relation to the criterion and supporting evidence
11	<u>Debundling check</u>	The CPA is not a de-bundled component of a large scale activity through the de-bundling check.	<del>Means of evaluation : Desk review and on-site visit</del> <del>Evidence : Check of geographical area, Check of applied technology/measure, Check of project activities under validation or registration</del>	<u>Debundling check is confirmed by DOE through desk review and on-site visit.</u>
12	<u>Others</u>	The CPA makes the agreement with CME to involve the CPA in PoA and obtain CERs rights. In case that CPA implementer is same with CME, the agreement is not necessary.	<del>N/A</del> <u>Agreement between CME&amp;CPA</u>	<u>The CPA implementer identify CME.</u>

### **Confirmation of additionality of the CPA for its inclusion into the PoA**

As discussed in Section B.1 of PoA, the additionality is demonstrated at the CPA level.

In case of this CPA, it can demonstrate additionality using "**Key criteria for assessing additionality**" in B.5 of Part II in PoA-DD.

Key criteria is as follow:

~~<Table D-44. Key criteria for assessing additionality>~~

Criteria	Description
1	Total installed capacity of photovoltaic power plants applied in the SSC-CPA is less than or equal to 15 MW.

As for Criteria 1 :

As this CPA applies photovoltaic power plants to collective housing and the total installed capacity is less than 15MW, ~~this~~se criteria is satisfied as follows:

~~<Table D-5. Installed capacity of independent photovoltaic power plant >~~

No.	Plant name	Capacity(kW)
1	Hoengseong Eupha	60.48
2	Anyang Gwanyang (A1BL)	126.72
3	Osan Cheongho(1,2BL)	129.6
4	Jecheon Gangjeon(A2BL)	60.48
5	Chungju Yeonsu(2)	172.8
6	Seosan Daesan	34.56
7	Hongseong Namjang(2BL)	83.52
8	Gwangju Seonun(8-1,2BL)	247.68
9	Yeongam Yongang(2)	46.08
10	Jangheung Geonsan(2)	40.32
11	Yeongcheon Mangjeong	80.64
12	Yangsan Gachon	77.76
13	Changwon Bongnim(A1BL)	109.44

14	Changwon Bongnim(A2BL)	92.16
15	Busan Jisa(2)	95.04
Total		1,457 kW

**In conclusion, this CPA is additional.**

## Appendix 1. Contact information of CPA implementers

Organization name	LH Corporation
Country	Republic of Korea
Address	19, Chungui-ro, Jinju-si, Gyeongsangnam-do
Telephone	82-55-922-3696
Fax	-
E-mail	<a href="mailto:birdrd77@lh.or.kr">birdrd77@lh.or.kr</a> <a href="mailto:dh79kim@lh.or.kr">dh79kim@lh.or.kr</a>
Website	<a href="http://www.lh.or.kr">www.lh.or.kr</a>
Contact person	<a href="#">Jonghyun Cho</a> <a href="#">Do Hwan Kim</a>

## Appendix 2. Affirmation regarding public funding

There is no public funding from Annex I for this project.

## Appendix 3. Further background information on ex ante calculation of emission reductions

Refer to section D.6.3. Ex-ante calculation of emission reductions.

## Appendix 4. Further background information on monitoring plan

Refer to section D.7.2. Description of the monitoring plan.

## Appendix 5. Summary report of comments received from local stakeholders

[No concerns or negative options were raised from the stakeholders.](#)

## Appendix 6. Summary of post-registration changes

[As for First PRC,](#) Refer to section [DB.64.3](#). Ex-ante calculation of emission reductions Description of the Monitoring plan on the prior Project Design Document had some errors and was not sufficient for monitoring plan and monitoring equipment.

A prior Project Design Document defined a measuring device built in inverter as measuring equipment. However, there are other electricity meters installed separately on project sites. Those electricity meters belong to one of the legal meters on Measures Act and are appropriate rather than measuring device in inverter.

Therefore, monitoring devices are changed from measuring devices built in inverter to electricity meters installed separately and monitoring plan is complemented. Accuracy of level and frequency of calibration is consistent with Measures Act and domestic guideline.

The electricity meters are required to be calibrated or recalibrated every 8 years and the accuracy of level is  $\pm 1.0\%$  in accordance with "Measures Act" and "Guideline for the support on the new & renewable energy equipment". The quantity of generated electricity will be continuously measured and recorded monthly.

Minor change is below:

- Change in the completion date of application of methodology and contact information of responsible person.
- Change of the name of body which certified renewable energy equipment from KEMCO to KEA.

Second PRC, there are changes of address because 15 PV plants of the CPA has assigned new address after construction and there are some slight differences on GPS coordinators and error.

## Document information

<i>Version</i>	<i>Date</i>	<i>Description</i>
09.0	31 May 2019	Revision to: <ul style="list-style-type: none"> <li>• Ensure consistency with version 02.0 of the “CDM project standard for programmes of activities” (CDM-EB93-A07-STAN);</li> <li>• Make editorial improvements.</li> </ul>
08.1	20 October 2017	Editorial revision to remove appendix “Applicability of methodologies and standardized baselines” from the main part of the form which had been mistakenly kept in the previous version.
08.0	28 June 2017	Revision to: <ul style="list-style-type: none"> <li>• Remove appendix “Applicability of methodologies and standardized baselines” as the appendix is not relevant at the CPA level;</li> <li>• Make editorial improvement.</li> </ul>
07.0	7 June 2017	Revision to: <ul style="list-style-type: none"> <li>• Improve consistency with the “CDM project standard for programmes of activities” and with the PDD and PoA-DD forms;</li> <li>• Make editorial improvement.</li> </ul>
06.0	24 May 2017	Revision to: <ul style="list-style-type: none"> <li>• Ensure consistency with the “Standard: CDM project standard for programme of activities” (CDM-EB93-A07-STAN) (version 01.0);</li> <li>• Incorporate the “Component project activity design document form for small-scale component project activities” (CDM-SSC-CPA-DD-FORM);</li> <li>• Make editorial improvement.</li> </ul>
05.0	15 April 2016	Revision to ensure consistency with the “Standard: Applicability of sectoral scopes” (CDM-EB88-A04-STAN) (version 01.0).
04.0	9 March 2015	Revision to: <ul style="list-style-type: none"> <li>• Include provisions related to statement on erroneous inclusion of a CPA;</li> <li>• Include provisions related to delayed submission of a monitoring plan;</li> <li>• Provisions related to local stakeholder consultation;</li> <li>• Provisions related to the Host Party;</li> <li>• Make editorial improvement.</li> </ul>
03.0	25 June 2014	Revisions to: <ul style="list-style-type: none"> <li>• Include the Attachment: Instructions for filling out the component project activity design document form for CDM component project activities (these instructions supersede the "Guidelines for completing the component project activity design document form" (Version 01.0));</li> <li>• Include provisions related to standardized baselines;</li> <li>• Add contact information on a CPA implementer and/or responsible person/ entity for completing the CDM-CPA-DD-FORM in A.13. and Appendix 1;</li> </ul>



<i>Version</i>	<i>Date</i>	<i>Description</i>
		<ul style="list-style-type: none"><li>• Add general instructions on post-registration changes in paragraph 4 and 5 of general instructions and Appendix 6;</li><li>• Change the reference number from F-CDM-CPA-DD to CDM-CPA-DD-FORM;</li><li>• Make editorial improvement.</li></ul>
02.0	13 March 2012	Revision required to ensure consistency with the "Guidelines for completing the component project activity design document form" (EB 66, Annex 16).
01.0	27 July 2007	EB 33, Annex 42 Initial adoption.
Decision Class: Regulatory Document Type: Form Business Function: Registration Keywords: component project activity, project design document		